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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,750	02/21/2006	Takuya Tsukagoshi	127113	6667
25944 7590 03/17/2009 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
CHU, KIM KWOK				
ART UNIT		PAPER NUMBER		
2627				
MAIL DATE		DELIVERY MODE		
03/17/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/568,750

**Applicant(s)**

TSUKAGOSHI ET AL.

**Examiner**

Kim-Kwok CHU

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 12/1/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 4-8 is/are allowed.
- 6) ☒ Claim(s) 2 and 3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Response to Remarks***

1. Applicant's Amendment and Remarks filed on January 23, 2009 have been fully considered. The amended Claim 2 does not overcome the original U.S.C. 112, second paragraph rejection. Applicant does not clarify what is the claimed "recovery time" based on his specification and Fig. 10. According to Claim 2, lines 9 and 10, the phrase "bringing the first recording beam set back to the original position in the following recovery time" has no further limitation to define the claimed "recovery time". Instead, Applicant amends the claim to describe when the recovery time for one of the first and second recording beams will be occurs (last 3 lines). In other words, the amended feature does not clarify the claimed "recovery time".

The U.S.C. § 102(e) rejection of Claims 1-3 and the U.S.C. § 103 rejection of Claim 4 are withdrawn because Applicant submitted an English translation of the priority document JP 2003/304833 to disqualify Tachibana's reference (2005/0237896) as a prior art.

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### ***Claim Objections***

2. Claim 2 is objected to because of the following informalities:

in claim 2, line 5, the term "the recording time" should be changed to --a recording time--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

*The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.*

4. Claims 1, 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, lines 11 and 13, "the holographic recording medium" lacks clear antecedent basis.

Regarding claim 2, line 5, "the recording time" does not have antecedent basis.

In Claim 2, lines 11 and 12, the amended phrase "bringing the first recording beam set back to the original position in the following recovery time" is vague. The term "following

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recovery time" is not clear as it lacks clear antecedent basis.

According to the specification, section 003 and 004, the recovery time is referred to the servo control acting on the tracking mirror and such definition is not in this claim.

Claim 3 not specifically mentioned above is rejected because it depends on the rejected base claim.

***Allowable Subject Matter***

5. Claims 1 and 4-8 are allowable over prior art.
6. Claims 2 and 3 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
7. The following is an Examiner's statement of reasons for the indication of allowable subject matter based on the amendment filed on 12/1/2008:

As in claim 1, the prior art of record fails to teach or fairly suggest a holographic recording method having following steps:

forming a laser beam into a collimated beam having an expanded diameter and then dividing the diameter into an object

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beam and a reference beam;

modulating the divided object beam according to information to be recorded; making these object and reference beams incident on the reflective surface of a rotating polygon mirror, while maintaining collimated beam shapes and being adjacent to each other, through a condenser lens having a focal point behind the reflective surface of the polygon mirror; and

moving the object and reference beams reflected on the reflective surface in a scanning direction determined by the angle change of the reflective surface, and meanwhile making the object and reference beams incident on the holographic recording medium moving in the same direction as the scanning direction with angles different from each other so as to interfere with each other within the holographic recording medium.

As in claim 2, the prior art of record fails to teach or fairly suggest a holographic recording method having following steps:

irradiating a first recording beam comprising one recording beam set from among multiple recording beam sets in a recording time while moving substantially in synchronization with and in the same direction as the holographic recording medium from an original position, the one recording beam set comprising an object beam and a reference beam forming an interference fringe

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on the holographic recording medium;

bringing the first recording beam set back to the original position [in the following/as a scanning] recovery time; and

irradiating at least a second recording beam comprising one recording beam set from among the remaining multiple recording beam sets in the [scanning] recovery time of the first recording beam while moving substantially in synchronization with and in the same direction as the holographic recording medium, wherein the [scanning] recovery time for one of the first and second recording beams occurs when the other of the first and second recording beams is recording.

As in claim 4, the prior art of record fails to teach or fairly suggest a holographic recording apparatus having following feature:

an object optical system and a reference optical system for guiding one of the divided collimated beams as an object beam and the other as a reference beam to the condenser lens as incident collimated beams;

a scanning optical system for guiding the object and reference beams reflected on the reflective surface of the rotating polygon mirror to the holographic recording medium while controlling the scanning direction determined by the rotation of the polygon mirror to match the moving direction of

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the holographic recording medium; and

a spatial light modulator, disposed in the object optical system, for modulating the object beam according to information to be recorded, wherein the object optical system and the reference optical system are configured so that the object and reference beams are integrated so as to maintain collimated beam shapes and be adjacent to each other without overlapping, and are made incident on the condenser lens with substantially the same beam shape as the collimated beam.

As in claim 8, the prior art of record fails to teach or fairly suggest a holographic recording apparatus having following feature:

a light shutter, disposed in a reference optical system that guides the reference beam in each of the recording beam optical systems, for blocking the reference beam independently; and

a controller for controlling the recording medium driver, each of the light shutters, and each of the spatial light modulators, wherein: the recording beam optical systems are sequentially provided with a first tracking mirror, a second tracking mirror, and so on, the first tracking mirror reflecting a first recording beam in a first recording beam optical system from among the multiple recording beam optical systems and



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moving the reflection point of the first recording beam, the second tracking mirror reflecting a second recording beam, which is guided by a second recording beam optical system from among the multiple recording beam optical systems, and the first recording beam, which is reflected from the first tracking mirror, toward the holographic recording medium and moving the reflection points of the second recording beam and the first recording beam in parallel with the reflection point on the first tracking mirror;

the recording beam optical systems each are configured so that the recording beams are alternately offset at least either in a driving direction of the holographic recording medium or in a direction orthogonal thereto and are made incident on the holographic recording medium; and

the controller can control each of the tracking mirrors and controls each of the tracking mirrors so that sequential recording on the holographic recording medium can be performed by the recording beams and one of the recording beams can be moved in the driving direction of the holographic recording medium in synchronization therewith in the period of recording while another recording beam is moving in the direction opposite to the driving direction, and controls the light shutter in a recording beam optical system of the recording beam not in

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recording operation to block an optical path of the recording beam optical system.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

### ***Related Prior Art***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jenkins et al. (5,416,616) is pertinent because Jenkins teaches a plurality of recording light beams in a holographic recording apparatus.

9. ***Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).***

***A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.***

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10. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

/Kim-Kwok CHU/  
Examiner AU2627  
March 6, 2009  
(571) 272-7585

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627